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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,206	11/27/2001	Christopher L. Hill	STL10005	9541

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EXAMINER	
MILLER, PATRICK L	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	Application No. 09/995,206	Applicant(s) HILL ET AL.	
	Examiner Patrick Miller	Art Unit 2837	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 01 November 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☒ Applicant's reply has overcome the following rejection(s): 35 U.S.C. 112(1st) rejections to claims 34-48 and 51-56.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *34-48 and 51-56*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached action for summary of the examiner's position.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Patrick Miller 11/25/05

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Response to after final rejection, filed 11/01/05, with respect to the 35 U.S.C. 112(1st) rejections have been fully considered and are persuasive. The rejection of claims 34-48 and 51-56 under 35 U.S.C. 112 (1st) has been withdrawn.

   - The examiner misinterpreted the claim language, "during application of power" as requiring an increase in applied power to the load. Accordingly, the examiner withdrawals the rejections under 112(1st) based on the claim language, Figures 4 and 5, and the Applicant's arguments (see page 11 of Applicant's response, beginning with the first full paragraph).

2. Applicant's arguments with respect to the obviousness rejection to Touchton et al. in view of Janonis et al. have been fully considered but they are not persuasive.

   - The Applicant argues that:

     > [i]t is thus not clear why a 'profile of said values that decrease in magnitude during application of power to said load' would be useful, or even desirable in Touchton '291. Since Touchton '291 integrates the coil current to estimate coil velocity, once the transistors Q1-Q4 are turned off, further integrated values are 'blind' and cannot be relied upon to indicate the actual coil velocity. See e.g., See col., 8, lines 49-59. Thus, one skilled in the art would not have a reasonable expectation of success by using the recited 'profile of said values that decrease in magnitude during application of power to said load.' See Response, p. 12, beginning with the last paragraph.

   - It is the examiner's position that a profile as claimed, would be useful and desirable in Touchton et al. (4,967,291) because one having ordinary skill in the art would want to modify the threshold, via a profile of values that change in magnitude (which encompasses decreasing in magnitude), based on various operating conditions upon

reinitialization. The claim language requires "a profile of said values that decrease in magnitude during application of power to said load." The claim language does not preclude changing the voltage threshold value upon a restart or reinitialization. Touchton et al. discloses that the transistors Q1-Q4 are opened when the voltage at the tap exceeds a threshold value (col. 8, ll. 26-35). The switches remain open until the system reinitializes (col. 8, ll. 43-48). Thus, one having ordinary skill in the art would recognize that the threshold value would not be changed for this cycle (i.e. not changed from initialization to shutdown). However, it would have been obvious to one having ordinary skill in the art that upon reinitialization, the threshold value may need to be changed (from the pre-shutdown value) due to different operating conditions. Janonis et al. (5,612,580) teaches changing a voltage reference value (col. 10, ll. 4-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to control the threshold voltage of Touchton et al. using a profile that has values that decrease when the power is supplied to the load, thereby providing the advantage of preventing the motor from exceeding a velocity based on the required operating conditions upon reinitialization, as taught by Janonis et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52, 53, 54, 55, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Touchton et al. (4,967,291) in view of Janonis et al. (5,612,580).

- With respect to claim 34, Touchton et al. discloses an apparatus comprising a circuit that monitors a cumulative amount of charge associated with a power supply (col. 7, ll. 27-51; Fig. 3, #72; Fig. 4, charge at #80 is monitored by #76 from Figs. 3 and 5), wherein the power is removed from a load when the cumulative amount of charge is at least equal to a predetermined value (cols. 7/8, ll. 52-68/1-11; when charge at capacitor 80, as indicated by the voltage appearing at 76, is above a threshold level, all four transistors are opened, thus interrupting power to the windings).
- With respect to claim 41, Touchton et al. discloses a system comprising: a motor coupleable to a power supply (Fig. 3, #18 to #54); a sensor coupleable to the motor (Fig. 3, #s 66 and 68 are sensors and sense current); a control circuit including an input and an output (Fig. 3, items #70, 71, 72, 74, 76), the input being coupleable to the sensor (Fig. 3, input to #70 is connected to the sense resistors #s 66 and 68), and wherein the control circuit provides an output signal on the output responsive to an amount of charge provided from the power supply that is at least equal to a predetermined threshold (Fig. 3,

output of #76 is responsive to the voltage/charge accumulated at the capacitor 80 from Figure 4; cols. 7/8, ll. 27-68/1-11; responsiveness is at least opening all four transistors).

- With respect to claim 47, Touchton et al. discloses a method comprising the steps of: monitoring a charge amount being removed from a power supply, and decoupling the power supply from a load responsive to the charge amount being at least equal to a predetermined level (Fig. 3, output of #76 is responsive to the voltage/charge accumulated at the capacitor 80 from Figure 4; cols. 7/8, ll. 27-68/1-11; responsiveness is at least opening all four transistors).
- Also note that Touchton et al. disclose that the threshold value is supplied to the detector 76 by a control circuit 64, or alternatively, the threshold value is stored within the detector 76 (col. 7, ll. 52-60). Touchton et al. also discloses that the control circuit is a microprocessor or minicomputer (col. 6, ll. 55-60).
- With respect to claims 34, 41, and 47, Touchton et al. does not disclose the value/threshold/level selected from a profile of values that decrease in magnitude during application of power to the load.
- Janonis et al. teaches using an up/down counter to change the voltage magnitude of a threshold voltage (col. 10, ll. 8-10; "to increase or decrease the voltage magnitude"). Specifically, Janonis et al. discloses changing the threshold voltage by executing an embedded charge profile algorithm by monitoring a return current (col. 10, ll. 10-12). Since the claim language (for claims 34, 41, and 47) only states that the magnitude values decrease during application of power to said load/motor, the examiner has interpreted this to require only that power is applied to the load, as opposed to power being increased to

the load. Therefore, since Janonis et al. discloses changing the voltage magnitude using a profile when power is applied to the load, this means that at some point the voltage magnitudes in the profile decrease, thus meeting the claims' "profile" limitation. It would have been obvious to one having ordinary skill in the art at the time of the invention that the processor of Touchton et al. could implement an up/down counter and an embedded charge profile algorithm to reduce the magnitude of the threshold voltage input into the detector (Fig. 5, #76) of Touchton et al. Implementing the ability to adjust a threshold voltage using a profile allows the velocity threshold of Touchton et al., which is indicated by the threshold voltage value, to be changed based on operating conditions or for different motors having different characteristics. This provides the advantage of adjusting the threshold to prevent the motor from exceeding a velocity over its maximum rated velocity for the given operating conditions.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to control the threshold voltage of Touchton et al. using a profile that has values that decrease when the power is supplied to the load, thereby providing the advantage of preventing the motor from exceeding a velocity based on the required operating conditions upon reinitialization, as taught by Janonis et al.
- With respect to claim 35, Touchton et al. disclose the load being a motor (col. 2, l. 68; voice coil motor).
- With respect to claim 36, Touchton et al. disclose drivers that are disabled in response to the cumulative amount of charge being at least equal to the predetermined value (cols.

7/8, ll. 52-68/1-11; "opens all four transistors," and the transistors are interpreted as drivers).

- With respect to claims 37 and 40, Touchton et al. discloses disabling driving transistors when a voltage value, which is directly related to the current through the motor, exceeds a predetermined value (col. 8, ll. 1-11). This is interpreted as minimizing spikes above the predetermined value indicate that the driving transistors should be disabled.
- With respect to claim 38, Touchton et al. disclose the cumulative amount of charge being monitored by an integrative device (Figs. 3 and 4, #72).
- With respect to claims 39 and 48, Touchton et al. disclose a voice coil motor, which is an inductive load (col. 2, l. 68).
- With respect to claim 42, Touchton et al. discloses an integrator coupled between the input and the output (Fig. 3, #72).
- With respect to claim 43, Touchton et al. discloses a comparator coupled between the input and the output (Fig. 3, #84 of #76).
- With respect to claim 44, Touchton et al. discloses a comparator and a latch, which the examiner interprets as a one shot type comparing comparator device because the latch latches the "trigger" signal from the comparator (Fig. 5).
- With respect to claims 45 and 46, Touchton et al. discloses motor drivers that are coupleable to the motor and the output (Fig. 3, Q1-Q4 are coupled to #18 and #76 via #64), wherein the motor drivers are controlled responsive to the output signal (cols. 7/8, ll. 60-68/1-11; responsiveness is opening all four transistors in response to the charge/voltage at the capacitor 80 from Figure 4).

- With respect to claim 51, Touchton et al. disclose decoupling the power supply from the load for a predetermined time (col. 8, ll. 45-48; complete reinitialization of the system must be done by periodically resetting the integrating circuit).
- With respect to claim 52, Touchton et al. discloses the amount of charge being removed from the power supply of the monitoring step is monitored by sensing an amount of current flowing through the load (Fig. 3, #s 66 and 68 are sensors that sense the current flowing through the load).
- With respect to claim 53, Touchton et al. discloses the monitoring step further comprising accumulating charge in relation to the sensed amount of current flowing through the load (Fig. 4, #80 accumulates charge based on the current flowing through the motor, which is sensed by the sense resistors36 and 44 from Figure 3).
- With respect to claims 54, 55, and 56, Touchton et al. disclose controlling the motor during acceleration (col. 7, ll. 34-39). Based on the teachings of Janonis et al. to use a profile to change the voltage threshold in Touchton et al., this means that the profile is used during acceleration.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick Miller
Examiner
Art Unit 2837

pm
November 25, 2005